Rubber World

The technical service magazine for the rubber industry

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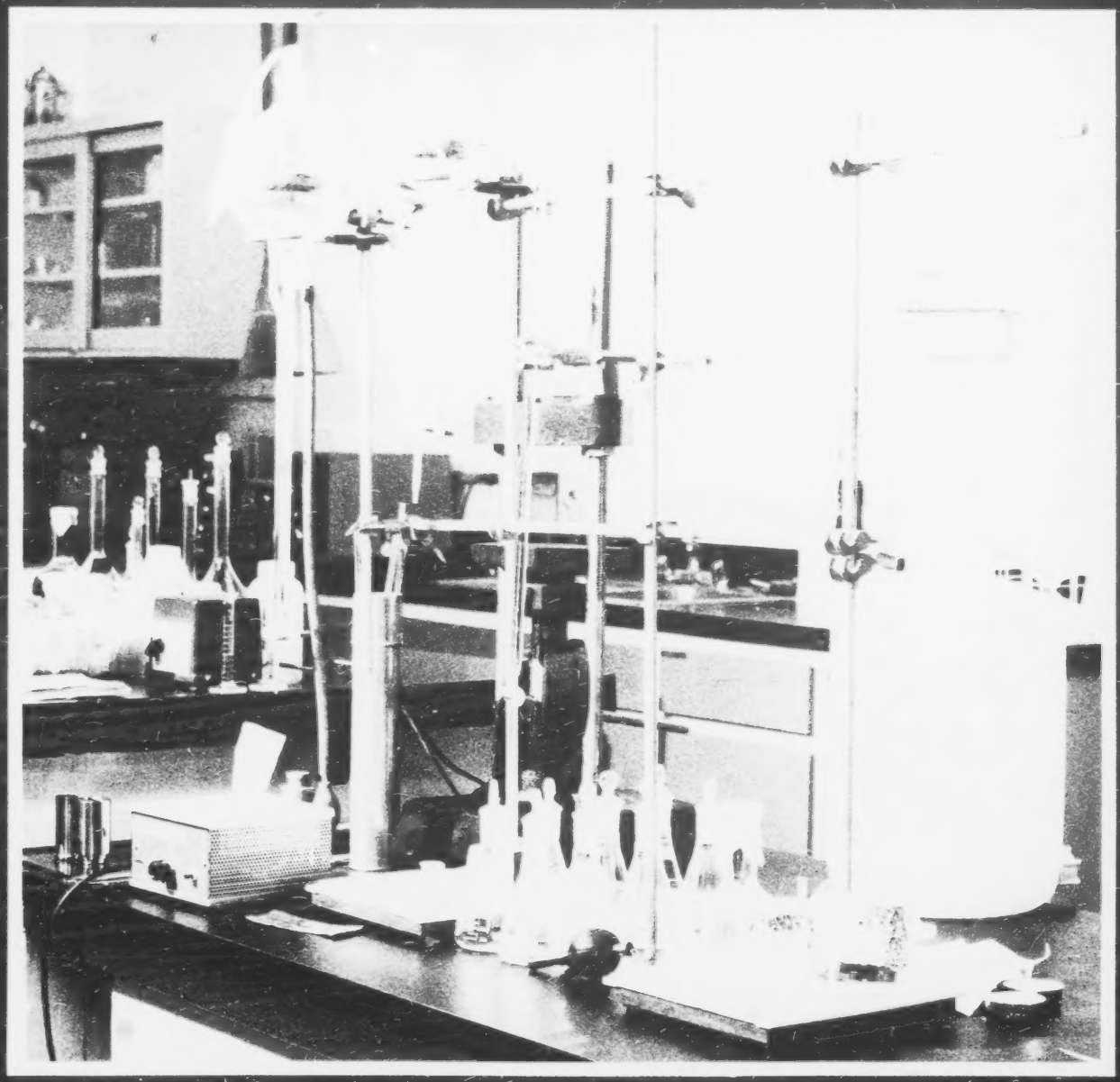
Using lab instruments in failure analysis



Compounding fluoroelastomers for resistance to extrusion at high temperature, pressure

Rubber Division fall meeting schedule

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Factors of mechanical design

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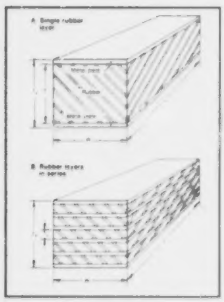
Acquisitions, expansions; contracts, licenses; financial statements; price changes; markets, news.

12 Tech Service — Backrinding: an old problem that's still with us
by Jon Menough, contributing technical service editor. A look at the causes of this molding problem and some ways of correcting the problem.

18 Use of laboratory instruments in failure analysis
by Jerry J. Leyden, Smithers Scientific Services. Article examines the concept of failure analysis and where lab instrumentation fits into this analysis. The proper steps which should be taken in a failure analysis investigation are also discussed.



Mechanical design p. 23

23 Factors of mechanical design
by Roy L. Orndorff, Jr. The BFGoodrich Co. Author explains important aspects of rubber engineering dealing with impact absorption, energy storage and isolating vibration or noise. Describes three types of engineered distortion of rubber and provides examples of good design.

31 Compounding fluoroelastomers for resistance to extrusion at high temperatures and pressures
by Ronald D. Stevens, E.I. du Pont de Nemours & Co. Article examines why fluoroelastomers resist extrusion at high temperatures and pressures and develops some guidelines for oil field compounders to use in formulating functional fluoroelastomer stocks.

38 New Patents
edited by Bob Samples, Akron Rubber Development

45 Techno Mart
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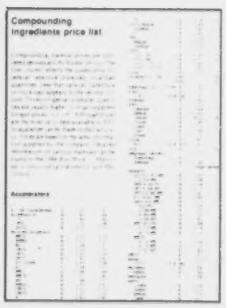

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53 Compounding Ingredients Price List
Rubber World's semi-annual compilation of prices of chemicals and materials used in the rubber industry.

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distributor and agent in North America.

Gates Energy Products signed a distributorship agreement with **Bridgestone** to sell "Cyclon" rechargeable batteries in Japan.

Polymer Concepts Inc. was appointed sales representative for **Metachem Corp.'s** Mereco Divisions in the states of North Carolina, South Carolina, and the southern part of Virginia.

Financial Statements

AccuRay Corp. reported net income of $1.548 million in the second quarter on total operating revenues of $31.8 million.

Alliance Tire and Rubber announced that consolidated net sales for the first quarter were IS. 3,188 billion and that consolidated net loss was IS. 106.23 million.

American Biltrite reported net earnings for the second quarter of $1.037 million on sales of $22.012 million.

Armstrong Rubber announced that third quarter net sales of $179.6 million produced net income of $6.7 million.

The Biltrite Corp. reported second quarter net earnings of $581,000 on sales of $18.121 million.

Bridgestone Corp. announced that it earned $35 million during the first six months of this year, with sales of $1,117 million during the period.

Carlisle Corp. reported net earnings of $8.031 million for the second quarter on net sales of $131.282 million.

Compo Industries' net income for its third quarter was $726,000, with consolidated revenues of $40.455 million.

RMA monthly tire & tube shipments & production report through June 1984 (figures in thousands of units)

Passenger Tires	1984	1983	% Change
Shipments			
Original Equipment	22,570	16,596	+36.00
Radial	18,845	13,847	+36.09
Replacement	58,532	53,035	+10.36
Radial	45,043	36,131	+24.67
Export	2,659	1,589	+67.34
Radial	1,977	1,056	+ 87.22
Total	83,761	71,220	+17.61
Radial	65,865	51,034	+29.06
Production	73,126	65,995	+10.81
Radial	54,140	45,813	+18.18
Truck & Bus Tires			
Shipments			
Original Equipment	3,288	2,030	+61.97
Radial	1,692	943	+79.43
Replacement	12,272	10,797	+13.66
Radial	4,246	3,422	+24.08
Export	560	420	+33.33
Radial	273	187	+45.99
Total	16,120	13,247	+21.69
Radial	6,211	4,552	+36.45
Production	15,272	12,732	+19.95
Radial	5,792	3,833	+51.11

Cooper Tire & Rubber reported second quarter net income of $6.4 million on sales of $147.6 million.

Crompton & Knowles announced that its second quarter net earnings were $2,366 on net sales of $62,550.

Essex Chemical said that its second quarter net profit totaled $3.318 million on sales of $56.987 million.

Freeport-McMoRan gave its second quarter net income as $25.857 million, with total revenues of $217.7 million.

BFGoodrich reported second-quarter net income of $32.4 million on sales of $883.4 million.

Goodyear had a worldwide second quarter net income of $108.6 million, with worldwide sales reaching $2.64 billion.

Lydall, Inc. announced second quarter earnings of $1.7 million on sales of $34.7 million.

Jones & Vining has second quarter net earnings of $688,000 on sales of $9.698 million.

Lubrizol reported that its net income for the second quarter was $21.618 million while revenues were $225.627 million during the period.

Myers Industries said that its second quarter net sales rose to $22.6 million, producing a net income for the period of $843,000.

Park-Ohio reports that its net sales reached $49.291 million in the second quarter and that net income rose to $1.102 million.

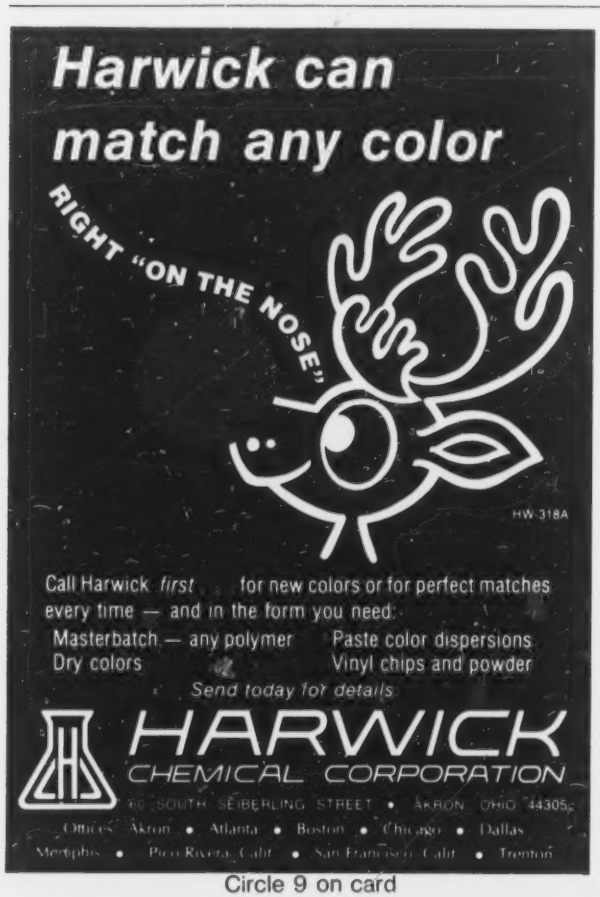
Pfizer reported second quarter net income of $118.1 million on sales of $985.7 million.

Sheller-Globe reported that its third quarter earnings were $11.1 million on sales of $217.5 million.

The Standard Products Co. reported that its net income for the fiscal year ending June 30, 1984 increased to $22.214 million and that its sales for the year reached $326.316 million.

Sybron Corporation has second quarter earnings of $3.788 million on sales of $149.232 million.

Uniroyal reported that its second quarter net income reached $30.2 million with sales of $615 million.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Markets, news

Footwear imported into the United States increased for the sixth month in a row according to the Commerce Department with June imports 29% higher than a year ago. George Langstaff, president of the Footwear Industries of America said imports have captured well over 70% of the domestic market and since the International Trade Commission's June ruling that the domestic footwear industry was not being injured by imports, nine shoe factories have shut down, bringing the total to 32 factory shutdowns for 1984.

The ITC's first quarter report shows the U.S. footwear trade deficit amounted to $1.2 billion in the first quarter of 1984, a 23% increase over the same period of 1983. Imports increased 22% and exports declined 8% during the period. Total imports of rubber footwear increased by 6%.

The ITC also reported that imports of passenger tires increased 50% to 7.2 million tires, imports of elastomers increased 44% to 637.2 million pounds, exports of elastomers increased 17% to 196.8 million pounds and imports of molding and forming machines increased 108% to $76 million for the first quarter of the year.

Dunlop Tire was erroneously named as an importer of Korean-made passenger tires in the anti-dumping petition filed by five other U.S. tire manufacturers. Randall Clark, tire division president of Dunlop said "Dunlop supports the action of the five other tire manufacturers in this matter and we anticipate submitting a response to the petition voicing our support."

World tire markets will grow at a compound rate of 3.4% per year for the rest of the decade according to Allied Fibers' H. H. Rowan. By 1990, North American passenger tire output will be 85% radial which will prove a bonanza for steel cord over this period. Rowan forecasts that the world's steel tire cord consumption will rise about 50% to around 500 million lbs. in 1990.

A study commissioned by the Chemical Manufacturers Association concludes DEHP is safe for use in toys and other products for children. The report said that di-2-ethylexyl phthalate (DEHP), a PVC plasticizer, is metabolized differently in humans than mice or rats. An earlier study showed DEHP caused liver tumors in rats and mice when fed high dosages of the plasticizer.

RMA industry rubber report through May 1984 (figures are expressed in metric tons)

	Cumulative 1984	Cumulative 1983	% Change 84 vs. 83
Total New Rubber			
New rubber available	1,398,364	1,161,885	20.35
Imports	467,149	351,031	33.89
Exports	152,373	132,624	14.89
Apparent Consumption	1,213,356	1,008,522	20.31
Total Natural Rubber			
Imports	366,323	288,848	26.82
Exports	9,846	7,706	27.77
Apparent Consumption	346,180	276,484	25.21
% Total new rubber	28.53	27.41	
Total Synthetic Rubber			
Production	931,215	810,854	14.84
Imports	100,826	62,183	62.14
Exports	142,527	124,918	14.10
Apparent Consumption	867,175	732,038	18.46
Total SBR			
Production	424,462	374,228	13.42
Imports	30,285	21,634	39.99
Exports	42,746	35,662	19.86
Apparent Consumption	393,717	361,338	8.96
Total Nitrile			
Production	28,157	21,935	28.37
Imports	4,825	3,351	43.99
Exports	3,156	2,526	24.94
Apparent Consumption	39,384	22,262	35.01
Polybutadiene			
Production	151,359	135,189	11.96
Imports	28,828	14,853	100.82
Exports	10,322	6,396	61.38
Apparent Consumption	170,010	139,516	21.86
Ethylene-Propylene			
Production	93,948	68,687	36.78
Imports	270	77	250.65
Exports	15,386	13,425	14.61
Apparent Consumption	74,120	54,808	35.24
Butyl, Polyisoprene, Silicone and other Synthetic Elastomers			
Production	182,034	157,935	15.43
Imports	33,871	21,201	59.76
Exports	54,480	46,064	18.27
Apparent Consumption	160,294	123,030	30.29
Polychloroprene			
Production	50,986	52,880	−3.58
Imports	1,747	1,067	63.73
Exports	16,437	20,845	−21.15
Apparent Consumption	39,653	31,086	27.56

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